

CLAIMS

We claim:

1. A press fit fastener, comprising:
 - a shank having a first end and a second end;
 - a head being located at the first end of said shank; and
 - a press fit portion being located at said shank, said press fit portion having an outer diameter and including a multiple helical profile, said helical profile having a beginning portion and an inclination portion having an increasing outer diameter, the outer diameter of said inclination portion being designed to increase in a direction towards said head to reach a maximum outer diameter, the maximum outer diameter of said inclination portion being spaced apart from said head.
2. The fastener of claim 1, wherein said press fit portion further includes a declination portion in which the outer diameter decreases in a direction towards said head.
3. The fastener of claim 2, wherein said press fit portion has a barrel-like shape.
4. The fastener of claim 1, wherein said press fit portion further includes a cylindrical adding portion, said cylindrical adding portion having the maximum outer diameter and being located next to said inclination portion in a direction towards said head.
5. The fastener of claim 2, wherein said press fit portion further includes a cylindrical adding portion, said cylindrical adding portion having the maximum outer diameter and being located next to said inclination portion in a direction towards said head.

1 6. The fastener of claim 4, wherein said cylindrical adding portion is located between
2 said inclination portion and said declination portion.

1 7. The fastener of claim 5, wherein said cylindrical adding portion is located between
2 said inclination portion and said declination portion.

1 8. The fastener of claim 1, wherein said helical profile includes at least six pitches.

1 9. The fastener of claim 1, wherein said helical profile has an angle of inclination of
2 between approximately 5° and 30°.

1 10. The fastener of claim 1, further comprising a threaded portion including a thread
2 having a flank diameter, said threaded portion being located at the second end of said shank
3 in a direction facing away from said head, said helical profile having a core diameter which is
4 greater than the flank diameter of said thread.

1 11. The fastener of claim 1, further comprising a threaded portion including a thread
2 having a flank diameter, said threaded portion being located at the second end of said shank
3 in a direction facing away from said head, said helical profile having a core diameter which
4 approximately equals the flank diameter of said thread.

1 12. The fastener of claim 1, further comprising
2 a threaded portion including a thread having an outer diameter, said threaded portion
3 being located at the second end of said shank in a direction facing away from said head; and

4 a centering section having an outer diameter, said centering section being located
5 next to said beginning portion of said helical profile, the outer diameter of said centering
6 section being greater than the outer diameter of said thread and being smaller than the
7 minimum outer diameter of said helical profile in the beginning portion.

1 13. The fastener of claim 12, wherein said centering section has an axial length which is
2 approximately between 10 % and 50 % of the maximum outer diameter of said press fit
3 portion.

1 14. The fastener of claim 12, wherein said centering section has an axial length which is
2 approximately 25 % of the maximum outer diameter of said press fit portion.

1 15. The fastener of claim 1, wherein fastener is designed as a wheel stud.

1 16. A method of producing a press fit fastener including a shank and a head, said
2 method comprising the steps of:
3 cold forming of a press fit portion at the shank of the fastener to produce a cylindrical
4 helical profile including a plurality of pitches; and
5 calibrating the helical profile without producing chips to produce an inclination portion
6 in which the outer diameter of the press fit portion in a direction towards the head increases
7 to reach the maximum outer diameter, the maximum outer diameter of the inclination portion
8 being spaced apart from the head.

1 17. The method of claim 16, wherein calibrating without producing chips is realized by
2 rolling.

- 1 18. The method of claim 16, wherein calibrating without producing chips is realized by
- 2 precision forming.